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EXAMINER

FLORES RUIZ, DELMA R

ART UNIT PAPER NUMBER

2828

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,002

Applicant(s)

THAKUR, MRINAL

Examiner

Delma R. Flores Ruiz

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Paul IP
PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

In regards to the applicant's argument about the drawings sent on January 21/2003 have not being received by the office. Therefore, the drawings mentioned by applicant in paper # 9, page 5, has not being filed and considered in the merits for this office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 6, 8, 10, 12, 15, 17, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler et al (5,610,932) in view of Mifune et al (4,377,635) further in view of Herkstroeter (4,933,948).

Regarding claims 1, 4, 6, 8, 10, 12, 15, 17, 19, and 21 Kessler discloses a highly efficient and low-threshold mirror less laser (producing laser -like emission without mirrors) and a method for producing a laser like emission without mirrors,

comprising: a) at least one strongly dipolar organic molecular salt having the following chemical formula as the active media: (Fig. 1 illustrates a laser system having an active medium (see Fig. 1, Character 12) where the active medium is a dye laser as described in Column 2 lines 45 – 68. Further, Kessler et al discloses alternative dye lasers, which can be used within the laser system. These alternative dye lasers include among the DASPI which has the same chemical formula as in claim 1) where R and R' are the same or different, and comprise a moiety selected from the group consisting of alkyl, substituted alkyl, benzyl, and substituted benzyl, and Y⁻ is an anion organic materials producing highly efficient laser -like emission at low thresholds without external mirrors (see Fig. 1, Character 20 and 22) in solution as active media ((See Figs. 1 and 13) Abstract, Column 3, Lines 49, Column 4 Lines 58 – 63, Column 7, Lines 8 – 37, and Column 8, Lines 1 – 16), ; and b) a pump laser projecting the excitation beam into the active media (see Figs. 1 – 13, Column 13, Lines 27 – 42). The mirrorless laser wherein R and R' is –CH₃ and Y⁻ is I⁻ (DASPI = I⁻) (Column 3, Lines 49, and (Column 13, Lines 8). the mirrorless laser which the pump (see Fig. 1, Character 16) is capable of emitting optical pulses having a pulse shorter than the duration (about < 100 picoseconds) of the excitation pulses and the excitation pulse-energy of less than about microjoule with a line excitation of about 5 mm² area (Column 3, Lines 49, Column 4 Lines 58 – 63). Kessler et al disclose the use of DASPI dye laser. Whereas, the patents to Mifune et al and Herkstroeter disclose dye laser solution used the formula as recited in the claims 1 and 12. For the reason of Kessler et al disclose the alkyl groups

dye laser, and Mifune et al and Herkstroeter al disclose the alkyl dye laser solution general equation with the alkyl group dye. It would have been obvious to one of ordinary skill in the art to provide Kessler with the alkyl group formula as taught or suggested by Mifune et al and Herkstroeter.

Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler et al (5,610,932) in view of Mifune et al (4,377,635) further in view of Herkstroeter (4,933,948) further in view of Urata et al. (6,509,009).

Regarding claim 2 and 13, Kessler et al in view of Mifune et al further in view of Herkstroeter discloses the claimed invention except for wherein R and R' are $-\text{CH}_3$ and Y⁻ is CH_3OSO_3 (SPCD = CH_3OSO_3). It would have been obvious at the time of applicant's invention, to combine Urata formula of teaching a R and R' are $-\text{CH}_3$ and Y⁻ is CH_3OSO_3 (SPCD = CH_3OSO_3), with mirrorless laser because it would have been obvious to one having ordinary skill in the art at the time the invention was made and R and R' are $-\text{CH}_3$ and Y⁻ is CH_3OSO_3 (SPCD = CH_3OSO_3) formula, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler et al (5,610,932) in view of Mifune et al (4,377,635) further in view of Herkstroeter (4,933,948) further in view of Carrig et al (5,543,960).

Regarding claims 3 and 14, Kessler et al in view of Mifune et al further in view of Herkstroeter discloses the claimed invention except for R and R' -CH₃ and Y⁻ is DAST formula. It would have been obvious at the time of applicant's invention, to combine Carrig formula of teaching a R and R' -CH₃ and Y⁻ is DAST formula, with mirrorless laser because it would have been obvious to one having ordinary skill in the art at the time the invention was made and R' -CH₃ and Y⁻ is DAST formula, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler et al (5,610,932) in view of Mifune et al (4,377,635) further in view of Herkstroeter (4,933,948) further in view of Thakur (6,404,647).

Regarding claims 5 and 16 Kessler et al in view of Mifune et al further in view of Herkstroeter discloses the claimed invention except for R and R' -CH₂CH₃ and Y⁻ is DEST formula. It would have been obvious at the time of applicant's invention, to

combine Thakur formula of teaching a R and R' -CH₂CH₃ and Y⁻ is DEST formula, with mirrorless laser because it would have been obvious to one having ordinary skill in the art at the time the invention was made and R and R' -CH₂CH₃ and Y⁻ is DEST formula, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claims 7, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler et al (5,610,932) in view of Mifune et al (4,377,635) further in view of Herkstroeter (4,933,948) further in view of Ashkin et al (3, 774,121).

Regarding claims 7 and 18 Kessler et al in view of Mifune et al further in view of Herkstroeter discloses the claimed invention except for the solid polymeric matrices is composed of poly(methyl methacrylate) (PMMA). It would have been obvious at the time of applicant's invention, to combine Ashkin formula of teaching a the solid polymeric matrices is composed of poly (methyl methacrylate) (PMMA), with mirrorless laser because it would have been obvious to one having ordinary skill in the art at the time the invention was made the solid polymeric matrices is composed of poly(methyl methacrylate) (PMMA), since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claims 9, 11, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler et al (5,610,932) in view of Mifune et al (4,377,635) further in view of Herkstroeter (4,933,948) further in view of Wada et al (5,741,595).

Regarding claims 9, 11, 20 and 22, Kessler et al in view of Mifune et al further in view of Herkstroeter discloses the claimed invention except for potassium dihydrogen phosphate (KDP) and β -barium borate (BBO) as a nonlinear optical crystal to increase the frequency output of the laser. It would have been obvious at the time of applicant's invention, to combine Wada formula of teaching a potassium dihydrogen phosphate (KDP) and β -barium borate (BBO) as a nonlinear optical crystal to increase the frequency output of the laser, with mirrorless laser because it would have been obvious to one having ordinary skill in the art at the time the invention was made and potassium dihydrogen phosphate (KDP) and β -barium borate (BBO) as a nonlinear optical crystal to increase the frequency output of the laser, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Response to Arguments

Applicant's arguments with respect to claims 1 – 21 have been considered but are moot in view of the new ground(s) of rejection.


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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (703) 308-6238. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.


Delma R. Flores Ruiz
Examiner
Art Unit 2828


Paul Ip
Supervisor Patent Examiner
Art Unit 2828

DRFR/PI
April 30, 2003